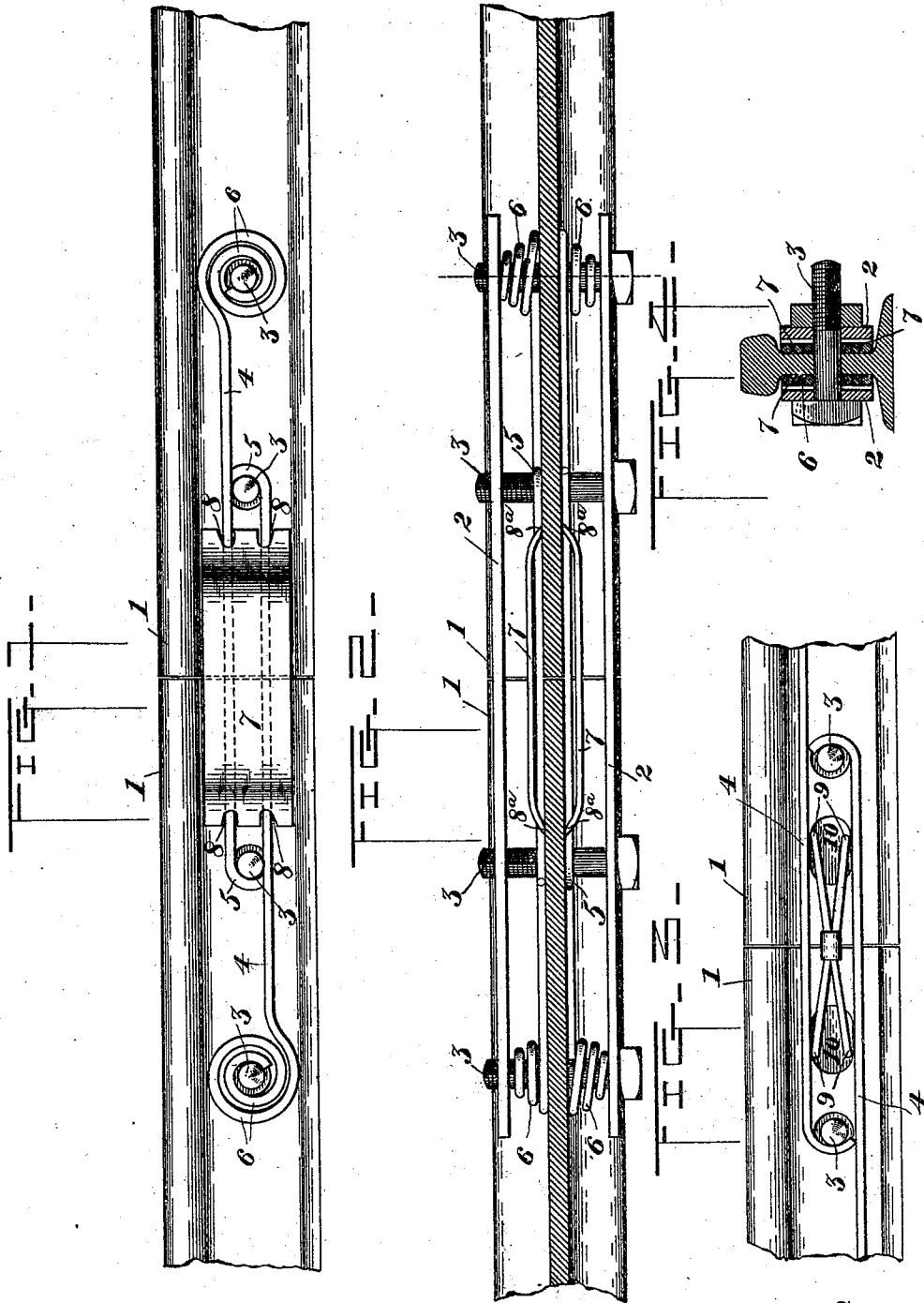


(No Model.)

B. C. SEATON.
ELECTRIC RAIL BOND.

No. 503,101.

Patented Aug. 8, 1893.



Witnesses

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UNITED STATES PATENT OFFICE.

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ELECTRIC RAIL-BOND.

SPECIFICATION forming part of Letters Patent No. 503,101, dated August 8, 1893.

Application filed March 2, 1893. Serial No. 464,313. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN C. SEATON, a citizen of the United States, residing at Nashville, in the county of Davidson and State of Tennessee, have invented certain new and useful Improvements in Electrical Bonds or Connectors for Railway-Rails; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in an electrical bond or connector between rail joints of railway tracks, and one object of my invention is the provision of a bond of this class which will be entirely concealed and protected by the fish-plates and which will not be deteriorated or influenced by the weather or other external conditions.

Another object of my invention is to insure thorough contact and conductivity by providing many points of contact which will freely convey or conduct the current of electricity and make a perfect and practical connection entirely free from electrolytic action.

A further object of my invention is the provision of a bond or connector which will possess a requisite amount of elasticity to yield to expansion and contraction and the pounding of traffic, and thereby always insure the contact and also prevent the nuts from detachment from the bolts in consequence of the heavy vibration and strain.

Another object of my invention is the provision of a detachable bond or connector which will be concealed and protected and which can be applied to any track in an inexpensive manner and which will be durable and thoroughly serviceable under all tests of operation.

To attain the desired objects the invention consists of a bond or connector embodying novel features of construction substantially as disclosed hereinafter.

Figure 1—represents a side elevation of the meeting ends of the two rails of a railway track

with my bond or connector there applied, the fish-plate being removed in order to clearly show the application of my invention. Fig. 2—represents a horizontal section with the bond or connector shown in plan. Fig. 3—represents a side elevation of a modified form of my bond or connector, and Fig. 4—represents a transverse section taken on line $x-x$ of Fig. 2.

Referring by numerals to the drawings, 1, designates the ends of two tracks; 2 the fish or splice plates placed on each side of the web of the rails; and 3 the fastening bolts; all of well known and common construction.

My bond or connector consists of the rods 4 having their inner ends severally formed with engaging hooks or bends 5 to embrace the bolts; and their outer ends are severally formed with convoluted elastic coils 6 to surround the other bolts; and I also employ the spring or elastic plates 7 made in one piece of metal and having notches 8 to receive the rods 4 and showing contracting edges, 8^a, to scrape against the rails all as clearly shown. The rods are made of steel preferably as is also the plate, and it will be seen that the entire conductor is concealed and protected by the fish-plates; also that a great many points of contact are provided and a perfect conductor is insured; also that the conductor accommodates itself to the contraction and expansion of the rail sections; and by reason of its outward spring tension the spring-plate will hold the nuts in place on the bolts.

If desired I may use the device shown in Fig. 3, which consists of the intersecting forked arms 9 adapted to enter and hold in elongated bolt openings 10 in the rails; and this construction is especially adapted for use with a special design of rail which will be manufactured with the bolt openings shown.

I would here state that I may use my connector on one or both sides of the rail but prefer to place it on both sides as it increases the conductivity besides strengthening the joints; and I may use the plates or dispense with them as found desirable and convenient.

It is evident from the foregoing that I pro-

vide a conductor which is entirely concealed and protected by the fish-plates, which can be applied at a very small cost and is durable, efficient, and practicable.

5 I claim—

1. In an electrical conducting rail joint, a bond or connection between the meeting ends of the rails, comprising a plurality of rods on each side of the rails and having their terminals severally connected to the bolts on opposite sides of the joints; the said rods on each side of the rail being concealed and protected by the fish plates.

15 2. A bond or connector concealed and protected by the fish-plates and consisting of a plurality of rods connected to the bolts and having an elastic play of action.

3. A bond or connector consisting of overlapping connections having bent terminals engaging the bolts of both rails, and capable of a longitudinal movement or play.

20 4. A bond or connector concealed and protected by the fish plates and consisting of a series of conducting rods each having one end formed with a spring coil for engaging the outer bolt of one rail and the other end formed with a bend or hooks for engaging the inner bolt of the opposite rail.

25 5. A bond or connector concealed and protected by the fish plates and consisting of a series of rods having their outer ends severally engaging the rails and their inner ends over-

lapping and in contact and severally engaging the rails to form the circuit.

6. The combination with the rails, bolts, and fish plates of conducting rods having their outer ends severally connected to the outer bolts and their inner ends severally connected to the inner bolts, and the plate or plates bearing on the rods and all covered by the fish plates.

7. In a device of the class described, the combination with the adjacent ends of the rails; the fish plates and a plurality of nuts and bolts on each side of the rail joint; of a plurality of elastic connections, each spanning from an outer bolt on one side to an inner bolt on the opposite side and in electrical connection with both bolts.

8. In a device of the class described, the combination with the adjacent rail-ends; the fish plates; and a plurality of nuts and bolts on each side of the rail joint; of a plurality of connecting rods running from an outer bolt on one side to an inner bolt on the opposite side of the joint; said rods being mutually in contact at a plurality of points.

In testimony whereof I affix my signature in presence of two witnesses.

BENJAMIN C. SEATON.

Witnesses:

WILLIAM S. BARKLEY,
FRANK T. EDENHARTER.